



# CHEMRITE® CILV

## Low Viscosity Crack Injection System

### PRODUCT DESCRIPTION

CHEMRITE® CILV is a two-component, low-viscosity epoxy injection system designed for the structural repair of cracks and voids in concrete and masonry structures.

The system restores structural integrity by bonding crack faces and preventing the ingress of water, air, and aggressive contaminants that may lead to reinforcement corrosion. Its low viscosity enables deep penetration into fine cracks.

CHEMRITE® CILV is suitable for both low-pressure and high-pressure injection applications. It is suitable to inject cracks down to 0.2 mm at the surface.

### KEY PERFORMANCE FEATURES

- Low viscosity for deep crack penetration
- High early strength development
- Excellent adhesion to dry and damp concrete
- High mechanical strength
- Resistant to a wide range of industrial chemicals
- Suitable for structural load-bearing repairs

### TECHNICAL PROPERTIES

<b>Product Type</b>	Epoxy Resin
<b>Number of Parts</b>	2
<b>Appearance</b>	
Part A - Epoxy Resin	Clear Liquid
Part B - Hardener	Amber liquid
<b>Mixing Ratio by Volume (Part A : Part B)</b>	2:1
<b>Viscosity (@25°C)</b>	150 cps
<b>Pot Life @25°C</b>	45 Minutes
<b>Solids Content</b>	≈ 100%
<b>VOC</b>	Low
<b>Bond to concrete</b>	Concrete Failure
<b>Compressive Strength – 24 Hrs (ASTM D695)</b>	60 MPa
<b>Tensile Strength – 7 Days (ISO 527)</b>	38 MPa
<b>Flexural Strength –7 Days (ASTM C580)</b>	77 MPa
<b>Modulus of Elasticity</b>	2.6 GPa
<b>Shelf Life</b>	2 Years (unopened)

### TYPICAL APPLICATIONS

CHEMRITE® CILV is designed for crack injection and structural reinstatement in:

- Structural concrete elements
- Bridge decks and piers
- Tunnel linings
- Water-retaining structures
- Concrete columns and beams
- Concrete piles
- Fractured slabs and foundations

### CHEMICAL RESISTANCE

Resistant to intermittent or accidental exposure to:

- Hydrocarbon fuels
- Oils
- 20% Ammonia solution
- 40% Sulphuric Acid
- 33% Hydrochloric Acid
- 50% Sodium Chloride solution

### APPROVALS

CHEMRITE® CILV is approved by the Queensland Department of Transport and Main Roads (Under the Product Index for Bridges and Other Structures) as a conforming product for concrete element repairs.



## Preparation and Application

### SURFACE PREPARATION

All substrates must be:

- Structurally sound
- Free of laitance, dust, grease, oil, curing compounds and release agents
- Free of standing water
- Clean and dry or damp (no active water flow)

### APPLICATION

#### LOW-PRESSURE INJECTION METHOD

##### Additional Products Required

- Chemrite® Epoxy Gel
- Chemrite Injectors

##### Crack Sealing

1. Fix injector flanges at designated injection points along the crack using the same gel (approximately 200mm apart).
2. Ensure the epoxy gel extrudes through flange base holes and extends  $\geq 3$  mm beyond flange circumference to ensure mechanical anchorage.
3. Ensure flange injection ports are not plugged with the epoxy gel.
4. Seal rest of crack surfaces using the Chemrite® Epoxy Gel.
5. Allow the epoxy gel to fully cure (4 hours) prior to injection. Chemrite® Epoxy Gel QS can be used where a faster cure time is required.

##### Mixing

- Mix **2 parts Part A : 1 part Part B** by volume.
- Mix at low speed for approximately 3 minutes until homogeneous.
- Do no mix more material than what can be applied within the product pot life.

##### Injection

1. Use the Chemrite® Injector to hand draw the mixed Chemrite® CILV from the mixing container.
2. Insert the Injector into the first flange and attach the rubber bands to the flange/injectors.
3. Move sequentially along crack line.
4. Leave previous injectors in place to allow full penetration and prevent backflow.
5. Check for any injectors that may have fully emptied, refill them and reinsert them.
6. After full cure, remove flanges and grind flush.

#### HIGH-PRESSURE INJECTION METHOD

##### Additional Products and Equipment Required

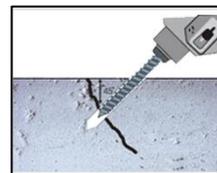
- Chemrite® Epoxy Gel
- Injection packers
- High pressure resin injection pump

##### Crack Sealing

Seal all the crack surface using the CHEMRITE® Epoxy Gel.

##### Installation of Packers

1. Drill an injection hole on one side of the crack at a 45° angle, aiming to intersect the crack from, to a depth approximately half the thickness of the concrete structure.



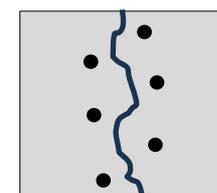
2. Insert the injection packer to maximum depth, ensuring the top nut remains exposed to attach a wrench.



3. Tighten packer nut to achieve seal. DO NOT over tighten as this will damage the packer.



4. Move along the crack length and install packers at approximately 200mm apart, alternating the side of the crack where the packer is installed, i.e., if the first hole was drilled from left to right, the next hole should be drilled from right to left.



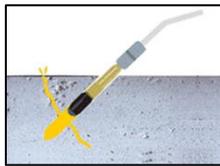


### Mixing

- Mix 2:1 ratio (Part A : Part B) at low speed for 3 minutes.
- Do not mix more material than what can be applied within the product pot life.

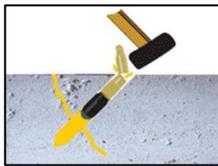
### Injection

1. Add the mixed product to the high-pressure pump.
2. Prime pump and discard first 200–300 ml to ensure the hose is free of contaminants.
3. Connect coupler to packer and commence injection.
4. Inject until:
  - Refusal pressure is achieved, or
  - Material flows from adjacent packer.
5. Move to adjacent packer and repeat sequentially.



### Completion

- Clean pump immediately after use.
- After curing, remove packer nuts by hitting it with a hammer.



- Fill remaining holes with Chemrite® Epoxy Gel.
- Grind flush the substrate surface as required.

### CLEANING

All tools and equipment should be cleaned before the curing process has started using the CHEMRITE® Epoxy cleaner.

Spillages should be contained with sand, clay or another inert absorbent material and disposed of in accordance with local regulations.

### PACKAGING

CHEMRITE® CILV is packaged in 3, 6, and 15 litre kits.

### STORAGE

Store product away from direct sunlight, in dry conditions and at temperatures between +5 °C and +30 °C.

### LIMITATIONS

CHEMRITE® CILV is not suitable for active water leaks (a water-reactive system should be used instead).

When cured, CHEMRITE® CILV forms a rigid compound and as such it should not be used for cracks where movement is expected to occur.

Chemrite Technologies offer water-reactive system and flexible joint sealants, if required. Contact us for technical support.

### SAFETY PRECAUTIONS

CHEMRITE® CILV is classified as hazardous. Refer to the product Safety Data Sheet (SDS) before use.

Whenever applying an epoxy resin, protective clothing must be worn. At a minimum, suitable rubber gloves and protective eyewear must be worn.

In an emergency, contact the Poisons Information Centre on 13 11 26.

### PRODUCT DISCLAIMER

This Technical Data Sheet (TDS) summarises to the best of our knowledge the characteristics of the product, how to use it and how to apply it based on the information available to us at the time. It is recommended that you read this TDS and consider the information in the context of how the product will be used, taking into consideration interactions with any other products, the type of surfaces it will be applied to and the way in which the product will be applied. We reserve the right to change the properties of our products. If you have any doubts about any content herein, it is strongly recommended that you contact one of our technical experts for advice. Our responsibility for products sold is subject to the CHEMRITE Technologies standard terms and conditions of sale. We do not accept any liability for any losses suffered or damages of any nature whatsoever resulting from the use of or reliance upon information herein, or the product to which information refers.

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